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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/801,234	03/07/2001	Kathleen B. Gross	56290USA5A.002	5421
32692	7590	03/09/2004	EXAMINER	
3M INNOVATIVE PROPERTIES COMPANY PO BOX 33427 ST. PAUL, MN 55133-3427			KEEHAN, CHRISTOPHER M	
			ART UNIT	PAPER NUMBER
			1712	

DATE MAILED: 03/09/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/801,234

Applicant(s)

GROSS ET AL.

Examiner

Christopher M. Keehan

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 01 December 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-4,6-12,14-37 and 39-42 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☐ Claim(s) 1-4,6,8-12,14,16,17,19-22,24-28,31-35,40-42 is/are rejected.
- 7) ☒ Claim(s) 7,15,18,23,29,30,36,37 and 39 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: \_\_\_\_\_

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### **DETAILED ACTION**

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

#### ***Claim Rejections - 35 USC § 102***

The rejection of claims 11, 14, and 21 under 35 U.S.C. 102(b) as being anticipated by Choate et al. (5,364,914) has been withdrawn due to applicant's amendments.

The rejection of claims 1-4, 6, 8-12, 20-22, 24, 26, 36, 37, and 39 under 35 U.S.C. 102(b) as being anticipated by Ha et al. (6,180,200 B1) has been withdrawn due to applicant's amendments.

The rejection of claims 11, 14, 16, 17, 19-21, and 24-26 under 35 U.S.C. 102(b) as being anticipated by JP 2000-303052 (JP '052) has been withdrawn due to applicant's amendments.

The rejection of claims 11, 14, 21, and 25 under 35 U.S.C. 102(b) as being anticipated by Money et al. (5,225,486) has been withdrawn due to applicant's amendments.

The rejection of claims 1, 4, 8, 11, 12, 16, 17, 19, 21, 22, 26, 28, and 35 under 35 U.S.C. 102(b) as being anticipated by Mizutani et al. (EP 0774476 A1) has been withdrawn due to applicant's amendments.

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The rejection of claims 1, 8, 11, 21, and 34 under 35 U.S.C. 102(b) as being anticipated by Chandrasekaran et al. (5,405,731) has been withdrawn due to applicant's amendments.

***Claim Rejections - 35 USC § 102/103***

The rejection of claim 27 under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Mizutani et al. (EP 0774476 A1) has been withdrawn due to applicant's amendments.

The rejection of claim 27 under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Ha et al. (6,180,200) has been withdrawn due to applicant's amendments.

The rejection of claim 27 under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over JP 2000-303052 (JP '052) has been withdrawn due to applicant's amendments.

***Claim Rejections - 35 USC § 103***

The rejection of claims 12, 13, 16, 17, and 22 under 35 U.S.C. 103(a) as being unpatentable over Money et al. (5,225,486) has been withdrawn due to applicant's amendments.

The rejection of claims 12 and 22 under 35 U.S.C. 103(a) as being unpatentable over JP 2000-303052 (JP '052) has been withdrawn due to applicant's amendments.

***Examiner's Comments***

In the previous office action, claims 5, 7, 13, 15, 18, 23, 29 and 30 were objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. Claims 5 and 13 have since been cancelled. The other claims are still allowable. Claims 31-33 and 38 were also indicated as allowable in the last office action. Claim 38 has since been cancelled. However, upon further searching, relevant prior art has been discovered and is applied to claims 31-33 as set forth below. The examiner regrets any inconvenience this might have caused applicant.

In independent claims 28, and 40-42, and dependent claim 16, applicant has included the claim language "adding from about 10 to about 80 parts by weight of epoxy-reactive thioether-containing compound." As applicant has not specified what this amount is relative to, it can read on the compositions as set forth below. It is suggested that applicant amend the claims to include amounts for the total composition.

***New Claim Rejections - 35 USC § 103***

Claims 1-4, 6, 8-12, 14, 17, 19-22, 24, 26, 27, and 40-42 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kaji et al. (JP 07179564) in view of Ha et al. (6,180,200 B1). The examiner is relying on the machine translation of this document, in addition to the abstract, attached hereto. Regarding claims 1-4, 8, 9, 11, 12, 16, 17, 19-22, 24, and 26, Kaji et al. disclose an adhesive comprising the reaction product of an epoxy resin, and an epoxy-reactive thioether-containing compound of thioether

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diepoxide (abstract) for use as an encapsulant or adhesive (machine translation, section 0001). Kaji et al. do not appear to disclose a catalyst or curative in the composition, or the claimed substrates. Ha et al. disclose an article comprising a substrate of a noble metal, plastic, polycarbonate, and silicon, more specifically gold (col.5, lines 10-15), and an adhesive comprising the reaction product of an epoxy resin (col.10, lines 1-10), an imidazole catalyst or curative (col.10, lines 21-23), and an epoxy-reactive thioether-containing compound (col.10, lines 39-58), a coupling agent (col.10, line 59-col.11, line 29), and an additive comprising silicon atoms (col.11, lines 10-23). It is the examiner's position that the thioether containing compounds as listed by Ha et al. can possess a molecular weight in the range as instantly claimed (claim 2). It would have been obvious to one of ordinary skill in the art at the time the invention was made to have added a catalyst or curative as taught by Ha et al. to the epoxy composition as taught by Kaji et al. because Ha et al. teach adding a catalyst or curative to an epoxy composition produces a cured composition for use in a variety of adhesive application, such as used by Kaji et al., resulting in a cured epoxy composition.

Regarding claims 6 and 14, Kaji et al. disclose a polyfunctional phenolic glycidyl ether epoxy resin (Abstract).

Regarding claim 10, it appears Ha et al. do not specifically disclose wherein the substrate is a print head or ink jet cartridge. Ha et al. do disclose bonding the instantly claimed adhesive to substrates that are the same as applicant's. However, it appears that naming the substrate as an ink jet cartridge or a printhead is an intended use of the

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method of bonding, and it is not clear how the intended use of the substrate materially affects the overall method of bonding.

Regarding claim 27, the Kaji et al. combination does not appear to specifically disclose the instantly claimed inherent properties. However, it would have been obvious to one of ordinary skill in the art at the time the invention was made for the composition of the Kaji et al. combination to have achieved at least similar properties because the materials of Kaji et al. are at least similar to those of applicant's, and at least similar materials would have yielded a composition with at least similar properties, absent evidence to the contrary.

Regarding claims 40-42, the same reasoning as set forth above for claims 1, and 6 also applies to claims 40-42. Regarding applicant's claimed range of from about 10 to about 80 parts by weight of the epoxy-reactive thioether-containing compound, it is the examiner's position that applicant has not specified in the claims to what this is being added. Therefore, the amount as claimed has not been defined, and the Kaji et al. combination applies to these claims as well.

Claims 28, 31-33, 35, and 40-42 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP 2000-303052 (JP '052). The examiner is relying on the translated version of this document as supplied by applicant. Regarding claim 28, JP '052 discloses a curable adhesive composition comprising an epoxy resin (sections 0007-0013), a catalyst (section 0046) and curative (section 0033), and an epoxy-reactive thioether-containing compound (section 0034).

Regarding claim 31, JP '052 discloses a polyfunctional phenolic glycidyl ether epoxy resin (section 0009).

Regarding claim 32, JP '052 discloses a polyamine curative (section 0033).

Regarding claim 33, JP '052 discloses an imidazole catalyst (section 0046).

Regarding claim 35, JP '052 discloses amounts included in the instantly claimed ranges, respectively (section 0034).

Regarding claims 40-42, the same reasoning as set forth above for claims 28 and 31 (JP '052) also applies to claims 40-42, as the claimed subject matter is essentially the same.

Claims 1, 6, 8, 11, 12, 14, 16, 17, 21, 22, 24, 25, 28, and 32-35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kaji et al. (JP 07179564) in view of Chandrasekaran et al. (5,405,731). The examiner is relying on the machine translation of this document, in addition to the abstract, attached hereto. Regarding claims 1, 8, 11, 12, 16, 17, 21, 22, 24, 25, 28, and 32-35, Kaji et al. disclose an adhesive comprising the reaction product of an epoxy resin, and an epoxy-reactive thioether-containing compound of thioether diepoxide (abstract) for use as an encapsulant or adhesive (machine translation, section 0001). Kaji et al. do not appear to disclose a catalyst or curative in the composition, or a polyimide substrate. Chandrasekaran et al. disclose an article comprising a substrate of polyimide (col.11, lines 29-35), and an adhesive comprising the reaction product of an epoxy resin (col.7, lines 12-37), a catalyst or curative (col.7, line 47-col.10, line 5), and an epoxy-reactive thioether containing



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compound that can have a molecular weight included in the instantly claimed amount (col.6, lines 3-15), adhesively bonded to the substrate. It would have been obvious to one of ordinary skill in the art at the time the invention was made to have added a catalyst or curative as taught by Chandrasekaran et al. to the epoxy composition as taught by Kaji et al. because Chandrasekaran et al. teach adding a catalyst or curative to an epoxy composition produces a cured composition for use in a variety of adhesive applications, such as used by Kaji et al., resulting in a cured epoxy composition.

Regarding claims 6 and 14, Kaji et al. disclose a polyfunctional phenolic glycidyl ether epoxy resin (Abstract).

#### ***Allowable Subject Matter***

To clarify to date, claims 7, 15, 18, 23, 29, and 30 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims, for the reasons as set forth in the previous office action. Claims 36, 37, and 39 are also objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. The prior art of record does not appear to teach or disclose an aliphatic epoxy-reactive thioether-containing compound as claimed.

#### ***Conclusion***

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Christopher M. Keehan whose telephone number is (571) 272-1087. The examiner can normally be reached on Monday-Friday, from 6:30 to 3:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vasu S. Jagannathan can be reached on 571-272-1119. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Christopher Keehan *CMK* DAVID J. BUTTNER  
PRIMARY EXAMINER

March 3, 2004

*David Buttner*